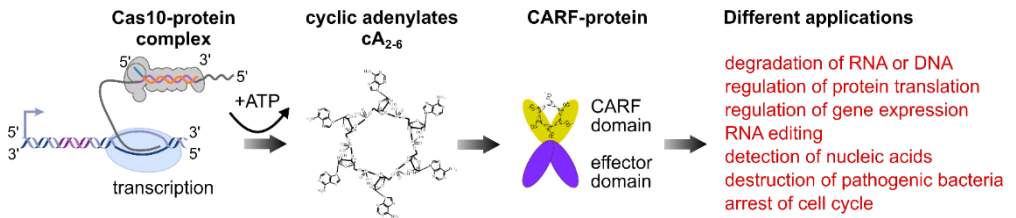


Production of cyclic adenylates and their use as allosteric regulators

Brief description of a technology

We developed a method for the synthesis of cyclic oligoadenylates using the catalytic activity of a protein containing a Palm (polymerase/cyclase-like) domain, such as the Cas10 protein. Various enzymes possessing the CARF (CRISPR-Associated Rossmann Fold) domain can be activated by cyclic oligoadenylates produced by a Cas10-containing protein. We propose the usage of cyclic oligoadenylates-regulated enzymatic activities for different applications.



Purpose

Production of cyclic oligoadenylates and usage of cyclic oligoadenylates-regulated molecular tools with different activities.

Fields of application

Cyclic oligoadenylates-regulated processes such as degradation of RNA or DNA, regulation of protein translation, RNA editing, regulation of gene expression; detection of nucleic acids; destruction of pathogenic bacteria; arrest of cell cycle; synthesis of circular nucleic acids; stabilization of RNA or aptamer; enzymatic synthesis of cyclic oligoadenylates.

Technology readiness

Technology is validated in lab.

Intellectual property

Patent application: WO2018220583 (A1).
Applicants: Vilnius University (Lithuania).

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Relevant publications

Kazlauskienė et al. (2017) *Science*, doi: 10.1126/science.aao0100
Mogila et al. (2019) *Cell Reports*, doi: 10.1016/j.celrep.2019.02.029

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